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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/771,674	02/05/2004	Tomoyuki Ohzeki	FS-F03227-01	3597

37398 7590 12/17/2007  
TAIYO CORPORATION  
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ALEXANDRIA, VA 22314

EXAMINER
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CHEA, THORL

ART UNIT	PAPER NUMBER
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1795

MAIL DATE	DELIVERY MODE
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12/17/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	10/771,674		OHZEKI ET AL.	
	<b>Examiner</b>		<b>Art Unit</b>	
	Thorl Chea		1795	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 October 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>20071109</u> .  | 6) <input type="checkbox"/> Other: _____                          |

### DETAILED ACTION

1. This office action is responsive to the request by a phone call made by the applicants' counsel on December 3, 2007 to reconsider the Declaration under 37 CFR 1.132 submitted on November 13, 2007. Thereby, a supplemental action in the response to the request is provided below.

#### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3, 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Okada et al (US Patent No. 6,120,983), Tzuzuki (US Patent No. 5,677,121), Siga et al (US Patent No. 4,332,889), Tsukada et al (US 2002/0058220A1), Winslow et al (US Patent No. 5,891,615) and Purol et al (US Patent No. 5,236,816).

Okada et al discloses a photothermographic material substantially as claimed. See the compound having adsorptive to silver halide and reducible group in columns 12-20, compounds 1 to 55; photosensitive silver halide in column 36, lines 3-35 including silver iodide or silver iodobromide having silver iodide content of 0.1 to 40 mole %; silver salt of an organic acid including silver behenate in column 37, lines 20-41; preferred polymer such as polyvinyl butyral in column 41, lines 13-30; the silver halide doped with iridium complex in column 36, lines 18-35. Tzusuki (US Patent No. 5,677,121) discloses non-photosensitive silver salt comprising silver salt of behenic acid from 35 to 90 mole % to provide a heat developable material with

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excellent storability to ordinary aging, excellent image storability, high sensitivity and low Dmax. See the disclosure in the abstract. Tsukada et al discloses a binder for a photothermographic material having glass transition temperature from  $-20^{\circ}\text{C}$  to  $80^{\circ}\text{C}$  to provide a photothermographic material with good storability and good coating property. Winslow et al (US Patent No. 5,891,615) discloses a 3-pyrazolidones (phenidones) in column 16, lines 27 as reducing agent for organic silver salt and Purols et al (US patent No. 5,236,816) discloses the "phenidones" as super-additive developing agent for silver ions including the "1-phenyl-3-pyrazolidone). See column 15.

Okada et al disclose a material substantially as claimed. The material taught therein includes the silver salt of an organic acid include silver behenate, silver iodide or silver bromiodide having iodide content up to 40 mole %, preferred binder such as polyvinyl butyral and the compound having a group adsorptive to silver halide and a reducible group. Okada my not specifically discloses the Tg of the binder and the 1-phenyl-3-pyrazolidone (Phenidones), but the polyvinyl butyral is the preferred binder and used in this present invention such as claimed in claim 8, and the "phenidones" has been known in Winslow et al and Purol as an equivalent functional group (reducing agent) for silver ion disclosed in Okada. The glass transition temperature of  $45^{\circ}\text{C}$  is inherent to the polyvinyl butyral binder. Tsuzki discloses the optimized range of silver behenate in the silver salt of an organic acid within the claimed range to provide a photothermographic material with excellent storability to ordinary aging, excellent image storability, high sensitivity and low Dmax. Moreover, Tsukada et al discloses a binder for a photothermographic material having glass transition temperature from  $-20^{\circ}\text{C}$  to  $80^{\circ}\text{C}$  to provide a photothermographic material with good storability and good coating property.

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Therefore, it would have been obvious at the time the invention was made to optimize the amount of silver behenate such as taught in Tsuzuki in combination with the preferred binder included polyvinyl butyral taught in Okada or in Tsukada et al to form a material taught in Okada in combination with the use of a known equivalent reducing for silver ions taught in either Winslow et al or Purols with an expectation of achieving a material with excellent storability to ordinary aging, excellent image storability, high sensitivity, low Dmax and good coating property, and thereby provide a material as claimed.

4. Claims 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okada et al (US Patent No. 6,120,983), Tsuzuki (US Patent No. 5,677,121), Tsukada et al (US 2002/0058220A1), Winslow et al (US Patent No. 5,891,615) and Purol et al (US Patent No. 5,236,816). as applied to claims 1-3, 6-8 above, and further in view of Siga et al (US Patent No. 4,332,889).

Siga disclose in column 6, lines 43-68 disclose the relative amount of the silver iodide with respect to silver bromide to satisfy the sensitivity condition and storage condition. It is disclosed that "from the view point of sensitivity of image forming material, the silver halide is desired to contains, beside silver iodide, at least 2 mole %, based on silver halide component, silver bromide and/or silver chloride, although the silver halide may include only silver iodide, i.e. 100 mole % of silver iodide. Furthermore, from viewpoint of stability of the raw image forming material, it is desired that silver halide component contains, besides silver iodide, silver bromide than silver chloride. Therefore, the most preferred silver halide component consists of silver iodide and silver bromide. In this case, silver iodide and silver bromide may be provided in either a mixture thereof or mixed crystals thereof. The molar ratio of silver iodide to silver bromide

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may be preferably 30/70 to 98/2, more preferably 50/50 to 95/5.” It would have been obvious to the worker of ordinary skill in the art at the time the invention was made to use silver halide having iodide and bromide taught in Siga to optimize the sensitivity and the storability of the material of Okada et al, and thereby provide a material as claimed.

5. Claims 9-11, 15-18 rejected under 35 U.S.C. 103(a) as obvious over the combination of Okada et al (US Patent No. 6,120,983), Winslow et al (US Patent No. 5,891,615) and Purol et al (US Patent No. 5,236,816).

See Okada et al which discloses compound having adsorptive to silver halide and reducible group in columns 12-20, compounds 1 to 55; photosensitive silver halide in column 36, lines 3-35 including silver iodide or silver iodobromide having silver iodide content of 0.1 to 40 mole %; silver salt of an organic acid including silver behenate in column 37, lines 20-41; preferred polymer such as polyvinyl butyral in column 41, lines 13-30; the silver halide doped a metal complex including with an amount of  $1 \times 10^{-9}$  to  $1 \times 10^{-2}$  mole/mole of silver including iridium complex in column 36, lines 3-35. Okada discloses a photothermographic material substantially as claimed which includes a compound having adsorptive to silver halide and reducible group, a photosensitive silver halide, an organic silver salt, a reducing agent, binder and the iridium, except the 1-phenyl-3-pyrazolidone (Phenidones) which has been known in Winslow et al and Pural. The 1-phenyl-3-pyrazolidone (Phenidones) have been known in the art has an equivalent function as reducing agent for silver ions taught in Okada et al. Therefore, it would have been obvious to the worker of ordinary skill in the art at the time the invention was made to use a known equivalent reducing agent group as the reducible group taught in Okada et al with an expectation of achieving good silver image, and thereby provide a material as claimed.

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6. Claims 12 -14, 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okada et al (US Patent No. 6,120,983) as applied to claims 9-13, 15-18 above, and further in view of Kimura (US 6,413,711), Goto et al (US 2003/0194638) and .

Okada et al fails to disclose the compound in claims 12-13 and the spectral sensitizing dye in claim 14, but these compounds has been known in Goto et al (US 2003/0194638), Ohzeki (US 2002/0197570) and Kimura (US 6,413,711). See Goto pages 1-3; Ohzeki in the abstract and spectral sensitizing dye, compound (2a) to (2d) in the abstract. It would have been obvious to the worker of ordinary skill in the art to use the compound taught either in Goto or Ohzeki in the material of Okada et al to increase the sensitivity thereof and the use of the infrared spectral sensitizing dye taught in Kimura to spectrally sensitize the material of Okada in the infrared region, and thereby provide a material as claimed.

#### ***Response to Arguments***

7. Applicant's arguments filed October 30, 2007 have been fully considered but they are not persuasive for same reason disclosed in the Final Office Action on September 24, 2007. The applicants argue that Winslow or Purol, 3-pyrazolidone/phenidone is an independent molecule which is in contrast in contrast with the compound having an adsorptive group to silver halide and a reducing group in the present invention has 3-pyrazolidone group as part of a molecule. Okada does not disclose a compound having a 3-pyrazolidone group as an electron donative group.

The argument is not persuasive since Okada et al discloses the compound having an adsorptive group to silver halide and a reducing group as part of a molecule. They may not discloses the 3-pyrazolidone group such as presented in the argument, but the 3-pyrazolidone

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group has been known as an equivalent to the reducing group taught in Okada et al. It would have been obvious to the worker of ordinary skill in the art at the time the invention was made to use a known group such as 3-pyrazolidone group equivalent to those taught in Okada et al with an expectation of producing similar results.

The Declaration submitted on November 13, 2007 fails to obviate the prima facie case of obviousness rejection. First, the Declaration is not commensurate with the scope of the claimed invention. The scope of silver halide in claims 1 and 9 encompasses the scope of any silver halide; the scope of the glass transition temperature is of 45 °C or higher while the Declaration shows only the PVB having glass transition temperature of 67 °C. The critical range of the glass temperature cannot be determined. The sample 101 in the specification disclosure contains an infrared sensitizing dye-1 and iridium compound while the scope of the claims contains no spectral sensitizing dye. The compounds used in the comparative samples contains different (W)<sub>n</sub> divalent link. See for instance the compound (3) and (3a). Second, the Declaration is not consistent with the disclosure of the specification. The specification as originally filed fails recognize whether the use of 1-phenyl-3-pyrazolidone group as B group in the compound of formula (I) would achieve a results over the other type of "B" group. See for instance the results shown in Table 5, samples 113 wherein the compound contains no 1-phenyl-3-pyrazolidone group provide a results similar to that of the compound with 1-phenyl-3-pyrazolidone group. Moreover, the results shown Table-2 on page 55 of Okada et al contains high sensitivity than that of the inventive samples r, , t, v and x in Table A of the Declaration. Accordingly, it is believed that the invention as claimed is prima facie obvious over the combination of the applied prior art of record.



***Conclusion***

8. This is a continuation of applicant's earlier Application No. 10/771,674. All claims are drawn to the same invention claimed in the earlier application and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the earlier application. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action in this case. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no, however, event will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

In this case, the "1-penyl-pyrazolidone group" has been previously presented, and had been previously rejected in the Office Action on September 29, 2007. There are additional prior art provided in the rejection above and on the action on November 15, 2007. Therefore, it is believed that the Final Office Action set forth in November 15, 2007 was proper.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thorl Chea whose telephone number is (571) 272-1328. The examiner can normally be reached on 9 AM-5:30 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia H. Kelly can be reached on (571)272-1526. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tch *tch*  
2007-12-12



Thorl Chea  
Primary Examiner  
Art Unit 1795